Upper Carboniferous-Permian tectonics in Central Mediterranean:
an updated revision

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An updated revision of the upper Carboniferous-Permian tectonics recorded in Corsica, Calabria and Tuscany is here proposed. We combine our and literature data to document how the sedimentary, tectono-metamorphic and magmatic upper Carboniferous-Permian record fits with a regional-scale tectonic scenario characterized by trascurrent fault systems associated with stretched crustal domains in which extensional regional structures, magmatism and transtensional basins developed. In Corsica, altogether with well-known effusive and intrusive Permian magmatism, the alpine S.Lucia nappe exposes a kilometer-scale portion of the Permian lower to mid-crust, with many similarities to the Ivrea-Verbano zone. The two distinct Mafic and Leucogranitic complexes, which characterize this crustal domain are juxtaposed by an oblique-slip shear zone named as S.Lucia Shear Zone. Structural and petrological data document interaction between magmatism, metamorphism and shearing during Permian in the c. 800-400 °C temperature range. In Calabria (Sila, Serre and Aspromonte), a continuous pre-Mesozoic crustal section is exposed. The lower crust portion of such section is mainly made up of granulites and migmatitic paragneisses with subordinate marbles and metabasites. The mid-crustal section includes an up to 13 km thick sequence of granitoids of tonalitic to granitic composition, emplaced between 306 and 295 Ma and progressively deformed during retrograde extensional shearing to end with a final magmatic activity between 295 and 277 Ma, consisting in the injection of shallower dykes in a transtensional regime. The section is completed by an upper crustal portion mainly formed by a Paleozoic succession deformed as a low-grade fold and thrust belt, locally overlaying medium-grade paragneiss units, and therefore as a whole reminiscent of the external/nappe zone domains of Sardinia Hercynian orogen. In Tuscany we document, how late Carboniferous/Permian shallow marine to continental sedimentary basins characterized by unconformity and abrupt change in sedimentary facies (coal-measures, red fanglomerate deposits) and acid magmatism well fit a transtensional setting with a mid-crustal shear zone linked with a system of E-W trending (in present orientation) upper crust splay faults. We will frame the whole dataset in a regional
framework of first-order transcurrent shear zones network which includes a westernmost S.Lucia Shear Zone and an easternmost East Tuscan Shear Zone, with intervening crustal domains in which extensional to transtensional shearing occurred.